The base map for Exhibit E-4 consists of copies of the U.S. Geological Survey 1:250,000 topographic quadrangle series maps "Santa Rosa, CA" and "Ukiah, CA" The 1:250,000 scale maps were used in order to illustrate the proposed coverage of Healdsburg at an optimum scale for the area served by a Class A facility. Exhibit E 4 also illustrates that the 3.16 mV/m contour encompasses all of the city of Healdsburg, as defined by the 1980 U.S. Census. Exhibit E 4 complies with Item 16 of FCC Form 301 Section V-B in showing original printed latitude and longitude markings. Supplemental labels are also provided for convenience.

U.S. Geological Survey 3 Arc Second Digital Elevation Model ("D.E.M.") data files were used to determine the average elevation of the terrain within the distance range of 3.0 to 16.0 kilometers from the proposed transmitter site for a total of 72 directions, starting at True North and proceeding clockwise in 5 degree increments. The normal complement of eight (8) of those radials was used to determine the average terrain elevation. The remaining 64 radials were used only to allow greater resolution in the location of the signal strength contours. Both the data file and the manner in which it was used are in accordance with the FCC Rules.

Population and Area Data

The number of persons residing within the predicted 60 dBu signal strength contour of the proposed facility is approximately 159,611. In order to make that determination, the predicted distances to the 1.0 mV/m (60 dBu) contour were used in conjunction with the MARF II 1980 U.S. Census database. This source provides census tract and sub-tract population data for each Minor Civil Division with clearly defined geographic reference coordinates. All sub-tracts located within the 1 mV/m (60 dBu) contour were summed to establish the total. No more accurate and authoritative population data is known to be available.

The land area contained within the predicted 60 dBu contour, approximately 2,573 square kilometers, was also computed on the

basis of the aforementioned distances to the 60 dBu (1.0 mV/m) contour.

Environmental Processing

The proposed operation would not have a significant environmental effect, as it is defined by Section 1.1307 of the FCC Rules. Based on information obtained by the applicant, it is stated here that the site is not in any designated wilderness area or wildlife preserve, or area whose designation as one is pending. To the best of Desert Rock's knowledge, the instant proposal will not affect any threatened or endangered species or cause damage to their habitats. Its existence will not affect any districts, sites, buildings, structures, or objects listed in the National Register of Historic Places or known to be eligible for such listing. The site is not known to be located in the vicinity of any Indian religious sites. There will be no significant change in the surface features of the site, nor is it located in a floodplain. Desert Rock does not anticipate that the FAA will require high intensity white lighting necessary to conspicuously mark the tower as an obstruction to aviators, but the site is not located in a residential neighborhood. In the event that high intensity white lighting is required, Desert Rock will take any actions necessary to comply with the Commission's Environmental Processing Regulations (§§1.1301 et seq.). In sum, a grant of the proposed facility would have no known adverse environmental effect.

Compliance With Section 1.1307(b)
Guidelines for Exposure to Radiofrequency Energy

This proposal would not have a significant environmental effect because of hazardous levels of non-ionizing Radiofrequency radiation exposure to workers and the general public. Radiofrequency radiation is discussed in "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation (OST Bulletin No. 65, FCC, October, 1985)." While OST Bulletin 65 provides worst case guidelines in table form for various types of broadcast facilities (Appendices B, C, and D), it also establishes formulas to predict the power density at the base of a tower.

Section 4.1 of ANSI C95.1-1982 establishes a protection guide for radiofrequency radiation. The guide provides limits measured in terms of plane wave power density for set ranges of frequencies. Using this guide, the limit of acceptable, safe power density for FM facilities is 1.0 mW/cm^2.

Desert Rock Limited Partnership Ch. 240A

Pages 7 - 9 of OST Bulletin 65 (Section II - Prediction Methods) discuss the development of a formula which may be used to predict the power density for FM Broadcast stations. Desert Rock is proposing herein to operate a circularly polarized 4 bay FM antenna approximately 31 meters above ground level at an effective radiated power of 3.4 kW. The total ERP for calculation purposes is the sum of the vertical and horizontal planes of radiation or 6.8 kW. Downwards radiation will be suppressed to less than 0.35 of the relative field between -60 and -90 degrees. A copy of a typical vertical plane elevation pattern supplied by a manufacturer, Shively Labs, is attached hereto as Exhibit E-5.

The basic formula is: $\dfrac{0.64 \times F^2 \times EIRP}{\pi \times R^2}$

S = Power density (mW/cm^2) at the base of the tower
0.64 = $[(1.6)^2/4]$ Ground Reflection Factor
F = Maximum Vertical Plane Relative Field (between -60° to -90°)
EIRP = Equivalent Isotropic Radiated Power (milliWatts)
EIRP = ERP x 1.64 (Where 1.64 = gain of half-wave Dipole Relative to Isotropic Radiator)
R = Dx to center of radiation in cm.

For Desert Rock, the final form is :

$$\mathbf{S} = \frac{0.64 \times 1.64 \times 0.35^2 \times (6{,}800{,}000\ mW)}{\pi \times (3{,}100)^2} \qquad \mathbf{S} = 0.029\ mW/cm^2$$

Thus, the proposed operation would, in the worst case, result in a ground level field intensity of less than three percent of the 1.0 mW/cm^2 limitation set forth in the FCC Guidelines.

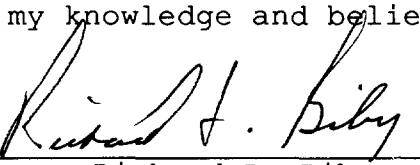
With OST Bulletin 65 as a guide to ANSI C95.1-1982, there is nothing to suggest that the implementation of Ch. 240A, as proposed herein, would create a significant environmental effect because of Radiofrequency Radiation exposure hazards. In sum, a grant of the proposed facility would have no known adverse environmental effect.

Aeronautical Considerations

The Western Pacific Regional Office of the Federal Aviation Administration ("FAA") has been notified of the instant Desert Rock proposal. A copy of the Notification sent to the FAA is attached as Exhibit E-6. A copy of the anticipated "Determination of No Hazard" will be forwarded to the Commission as soon as it is received.

Certification

Under penalty of perjury, I do hereby state that the foregoing is true and correct to the best of my knowledge and belief.



Richard L. Biby,
Registered Professional Engineer
District of Columbia Reg. No. 5710E
Commonwealth of Virginia Reg. No. 014018

Exhibit E-1

FM Allocations Table

Application for a New FM Station

Ch. 240A 95.9 MHz 136m AAT 3.4 kW

Desert Rock Limited Partnership

Healdsburg, California

Call	Location	Channel & Class	Separation (km)	Required (km)
Vacant	Vacaville, CA (Reserved for KUIC(FM)	237B1 MM Docket 88-491)	90.4	48
Add	Middletown, CA	238A	32.0	31
KKHI-FM	San Francisco, CA	239B	119.6	113
KALF	Red Bluff, CA	239B	139.6	113
KYMX	Sacramento, CA	241B	123.5	113
KOIT-FM	San Francisco, CA	243B	112.4	69

Note: Stations exceeding distance separation requirements by more than 50 km are not listed above.

Prepared By Richard L. Biby
Communications Engineering Services, P.C.
Falls Church, Virginia February, 1991

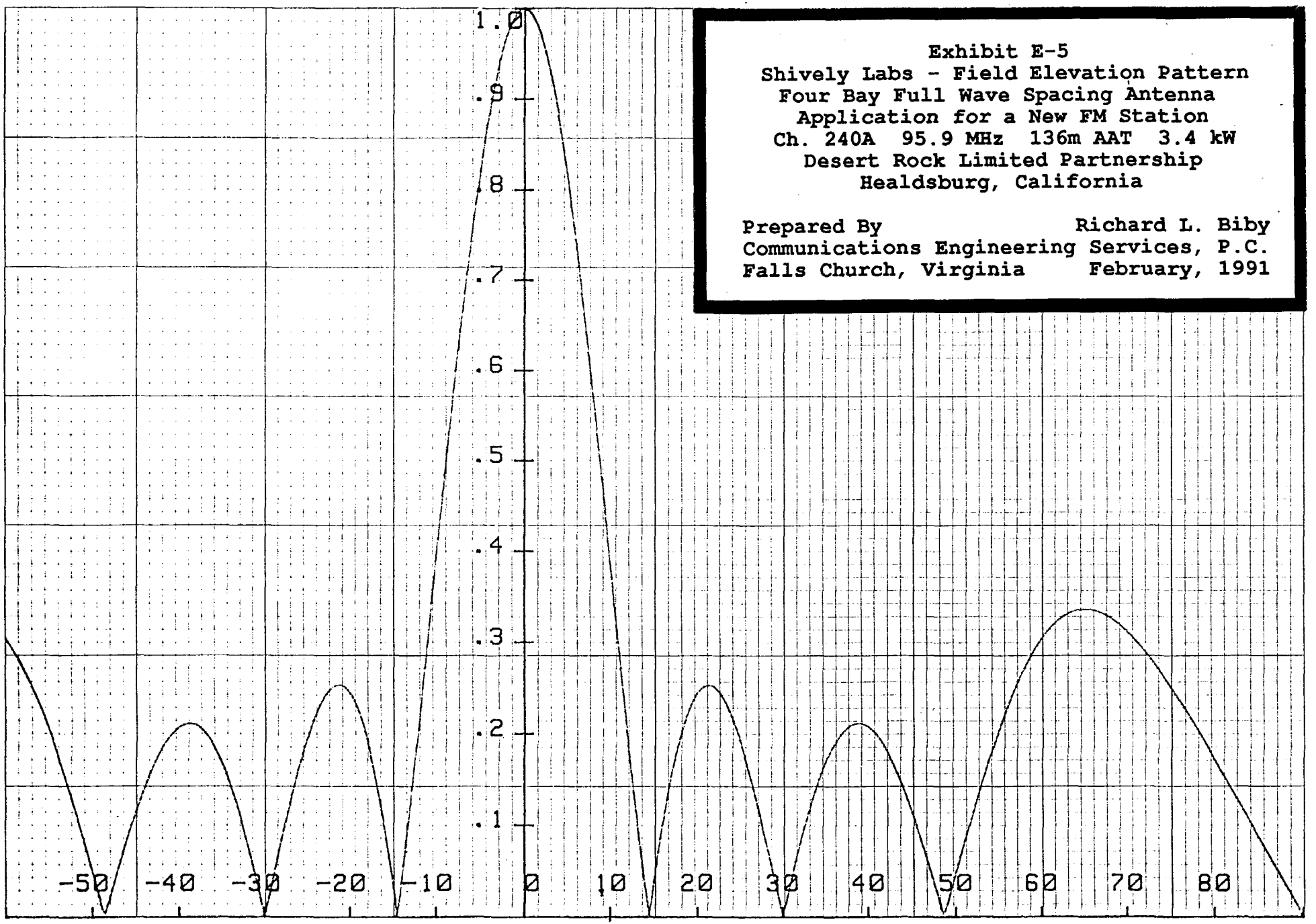
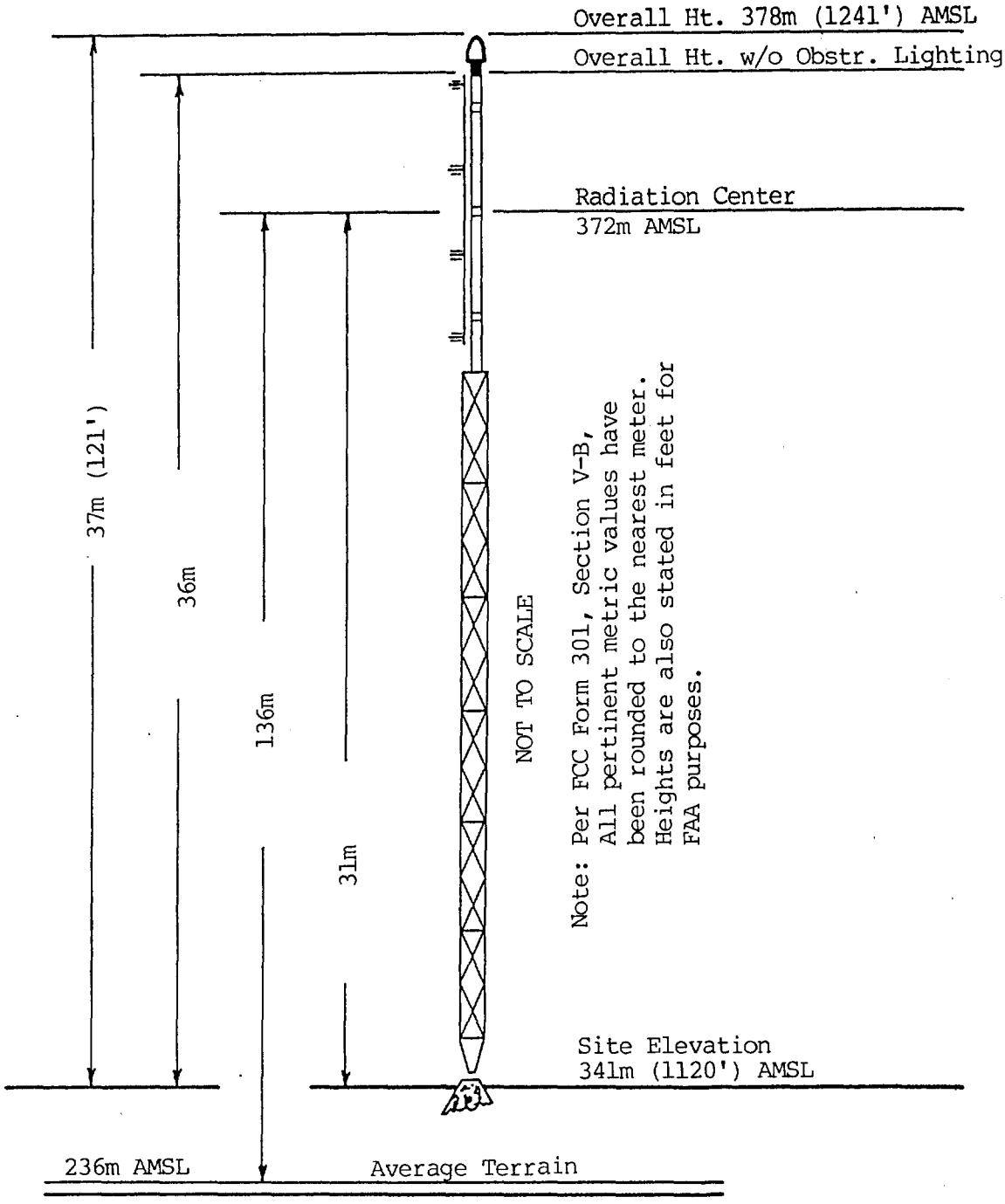


Exhibit E-5
Shively Labs - Field Elevation Pattern
Four Bay Full Wave Spacing Antenna
Application for a New FM Station
Ch. 240A 95.9 MHz 136m AAT 3.4 kW
Desert Rock Limited Partnership
Healdsburg, California

Prepared By Richard L. Biby
Communications Engineering Services, P.C.
Falls Church, Virginia February, 1991



North Latitude: 38° 40' 54"
West Longitude: 122° 58' 15"

Exhibit E-3
Antenna Sketch
Application for a New FM Station
Ch. 240A 95.9 MHz 136m AAT 3.4 kW
Desert Rock Limited Partnership
Healdsburg, California

Prepared By Richard L. Biby
Communications Engineering Services, P.C.
Falls Church, Virginia February, 1991

Exhibit E-6

DO NOT REMOVE CARBONS

Form Approved OMB No. 2120-0001

U.S Department of Transportation
Federal Aviation Administration

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

Aeronautical Study Number

1. Nature of Proposal (From FCC Grant)

A. Type	B. Class	C. Work Schedule Dates
■ New Construction	■ Permanent	Beginning 60 days
☐ Alteration	☐ Temporary (Duration _____ months)	End 6 months

2. Complete Description of Structure

A. Include effective radiated power and assigned frequency of all existing, proposed or modified AM, FM, or TV broadcast stations utilizing this structure.

B. Include size and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports.

C. Include information showing site orientation, dimensions, and construction materials of the proposed structure.

New tower to support a new FM station to serve Healdsburg, CA on 95.9 MHz Max ERP 3.4kW circularly polarized 4 bay antenna

(if more space is required, continue on a separate sheet.)

3A. Name and address of individual, company, corporation, etc. proposing the construction or alteration. (Number, Street, City, State and Zip Code)

( ) _____
area code Telephone Number

Desert Rock Limited Partnership
39 Santos Way
Chico, CA 95926

B. Name, address and telephone number of proponent's representative if different than 3 above.

Richard L. Biby, P. E.
Communications Engineering Services, P. C.
6105-G Arlington Blvd.
Falls Church, VA 22044 703-534-7880

4. Location of Structure

A. Coordinates (To nearest second)	B. Nearest City or Town, and State	C. Name of nearest airport, heliport, flightpark, or seaplane base
	Geyserville	Healdsburg Muni
38° 40' 54" Latitude	(1) Distance to 4B 4.2 Miles	(1) Distance from structure to nearest point of nearest runway 4.2 mi
122° 58' 15" Longitude	(2) Direction to 4B ENE	(2) Direction from structure to airport N 114° E

5. Height and Elevation (Complete to the nearest foot)

A. Elevation of site above mean sea level	1120
B. Height of Structure including all appurtenances and lighting (if any) above ground, or water if so situated	121
C. Overall height above mean sea level (A + B)	1241

D. Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). (if more space is required, continue on a separate sheet of paper and attach to this notice.)

300 meters SSE of the top of Bradford Mtn, 6.7 km WSW of Geyserville, Sonoma County, CA

(see attached map and tower sketch)

Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than $500 for the first offense and not more than $2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).

I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.

Date	Typed Name/Title of Person Filing Notice	Signature
2/7/91	Richard L. Biby, P. E.	Richard L. Biby

FOR FAA USE ONLY *FAA will either return this form or issue a separate acknowledgement.*

The Proposal:

- ☐ Does not require a notice to FAA.
- ☐ Is not identified as an obstruction under any standard of FAR, Part 77, Subpart C, and would not be a hazard to air navigation.
- ☐ Is identified as an obstruction under the standards of FAR, Part 77, Subpart C, but would not be a hazard to air navigation
- ☐ Should be obstruction ☐ marked, ☐ lighted per FAA Advisory Circular 70/7460-1, Chapter(s) _____
- ☐ Obstruction marking and lighting are not necessary.

Remarks:

Supplemental Notice of Construction FAA Form 7460-2 is required any time the project is abandoned, or

- ☐ At least 48 hours before the start of construction.
- ☐ Within five days after the construction reaches its greatest height.

This determination expires on _____ unless:

(a) extended, revised or terminated by the issuing office;
(b) the construction is subject to the licensing authority of the Federal Communications Commission and an application for a construction permit is made to the FCC on or before the above expiration date. In such case the determination expires on the date prescribed by the FCC for completion of construction, or on the date the FCC denies the application.

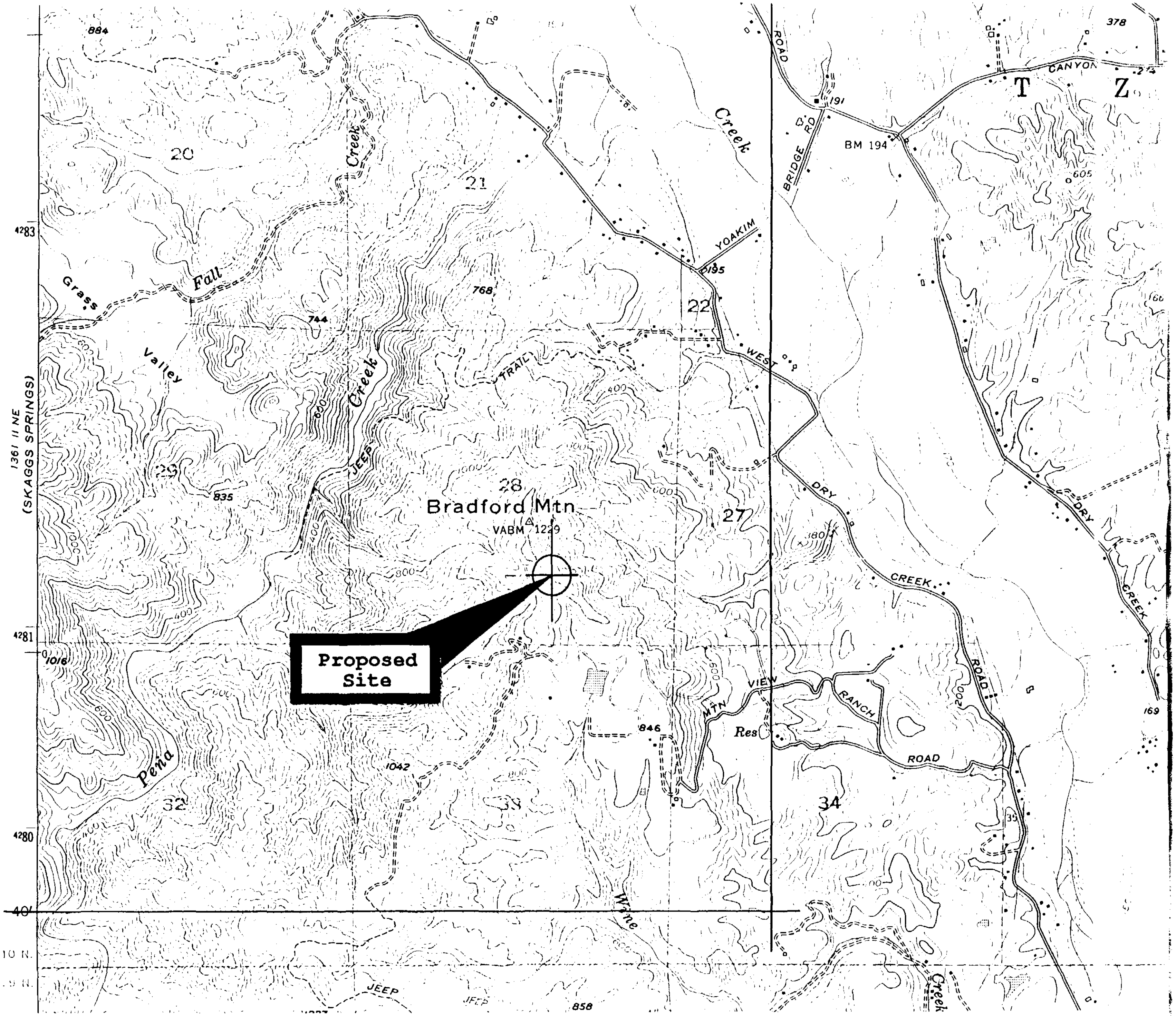
NOTE: Request for extension of the effective period of this determination must be postmarked or delivered to the issuing office at least 15 days prior to the expiration date.

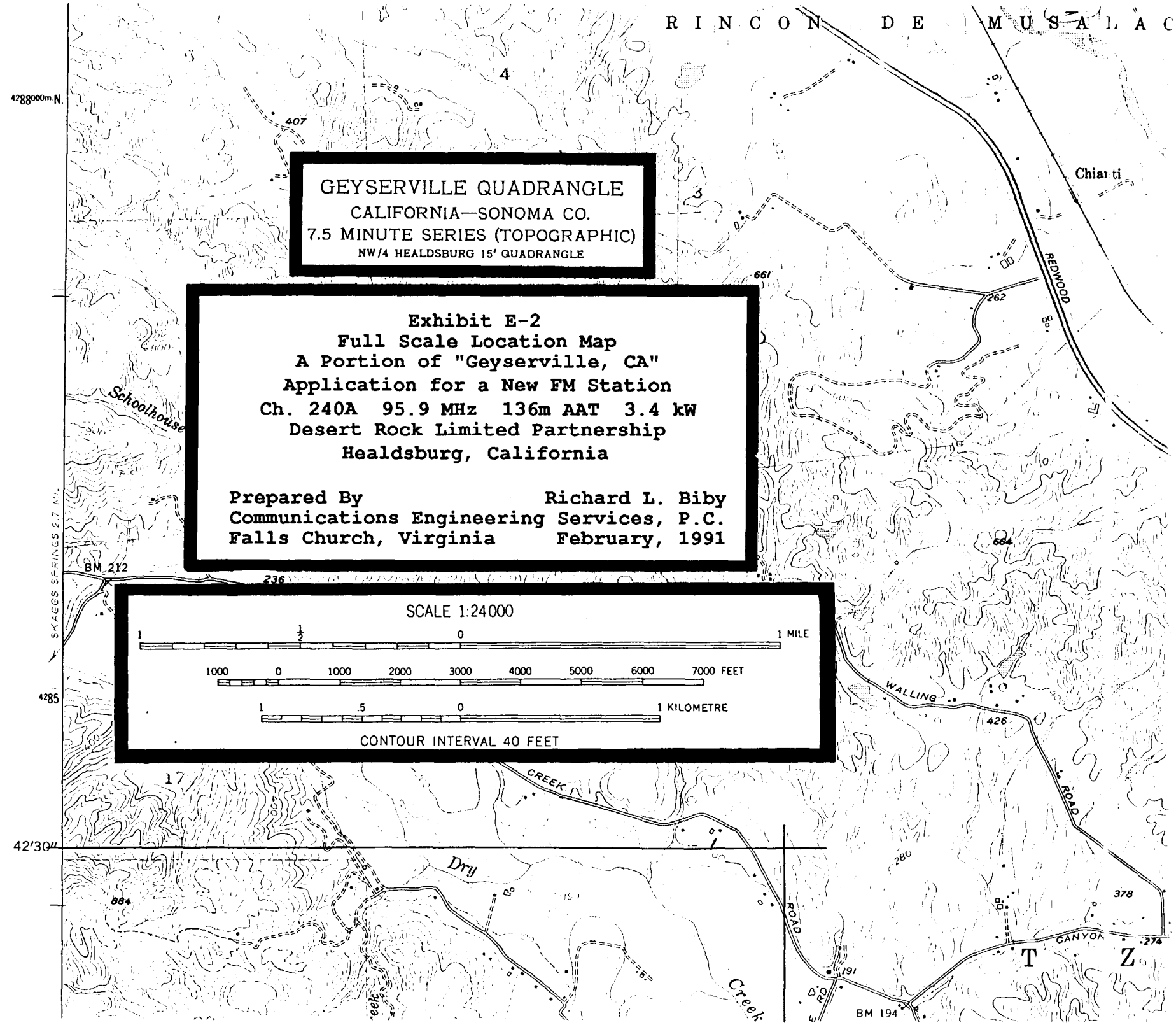
If the structure is subject to the licensing authority of the FCC, a copy of this determination will be sent to that Agency.

Issued In	Signature	Date

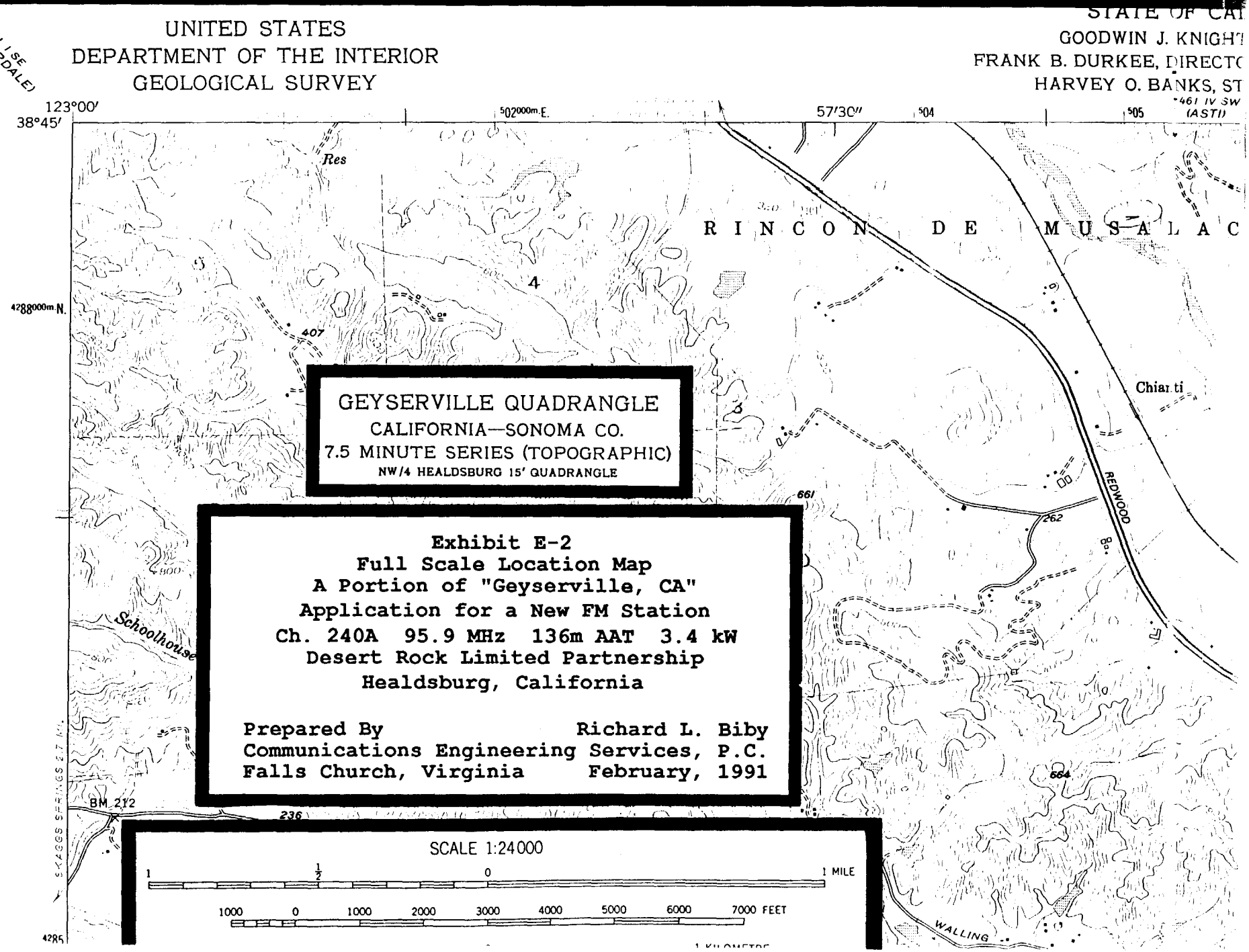
FAA Form 7460-1 (8-85)

DO NOT REMOVE CARBONS


Proposed
Site
Bradford Mtn
VABM 1229
Grass Valley
Fall Creek
Creek
Pena
Wine
DRY CREEK ROAD
WEST DRY CREEK
MTN VIEW RANCH ROAD
YOAKIM BRIDGE RD
CANYON ROAD
BM 194
JEEP TRAIL
Res
1361 II NE
(SKAGGS SPRINGS)
T. 10 N.
T. 9 N.


RINCON DE MUSALAC
GEYSERVILLE QUADRANGLE
CALIFORNIA—SONOMA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 HEALDSBURG 15' QUADRANGLE
Exhibit E-2
Full Scale Location Map
A Portion of "Geyserville, CA"
Application for a New FM Station
Ch. 240A 95.9 MHz 136m AAT 3.4 kW
Desert Rock Limited Partnership
Healdsburg, California
Prepared By Richard L. Biby
Communications Engineering Services, P.C.
Falls Church, Virginia February, 1991
SCALE 1:24000
1 MILE
7000 FEET
1 KILOMETRE
CONTOUR INTERVAL 40 FEET
4288000m.N.
4285
42'30"
SKAGGS SPRINGS 2.7 MI.
Schoolhouse
Dry
Creek
REDWOOD
WALLING
ROAD
CANYON
Chiarti
BM 212
BM 194
407
661
262
664
236
426
280
378
274
191
884
T
Z

[redacted]


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CA
GOODWIN J. KNIGHT
FRANK B. DURKEE, DIRECTO
HARVEY O. BANKS, ST
(CLOVERDALE)
123°00'
38°45'
502000m.E.
57'30"
504
505
4288000m.N.
RINCON DE MUSALAC
Res
407
661
262
Chiarti
REDWOOD
Schoolhouse
BM 212
236
664
WALLING
SCALE 1:24000
1 MILE
7000 FEET
GEYSERVILLE QUADRANGLE
CALIFORNIA—SONOMA CO.
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NW/4 HEALDSBURG 15' QUADRANGLE
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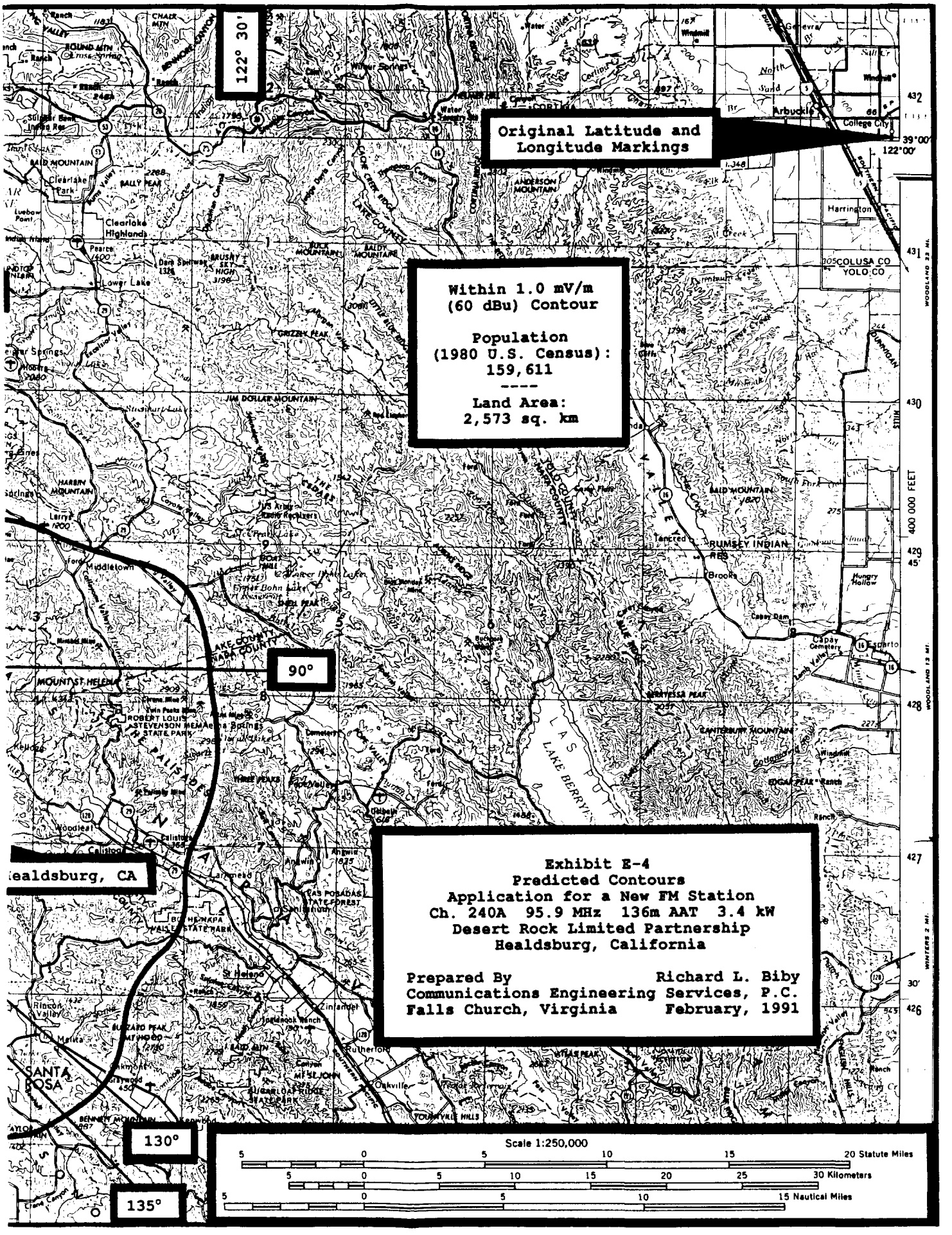
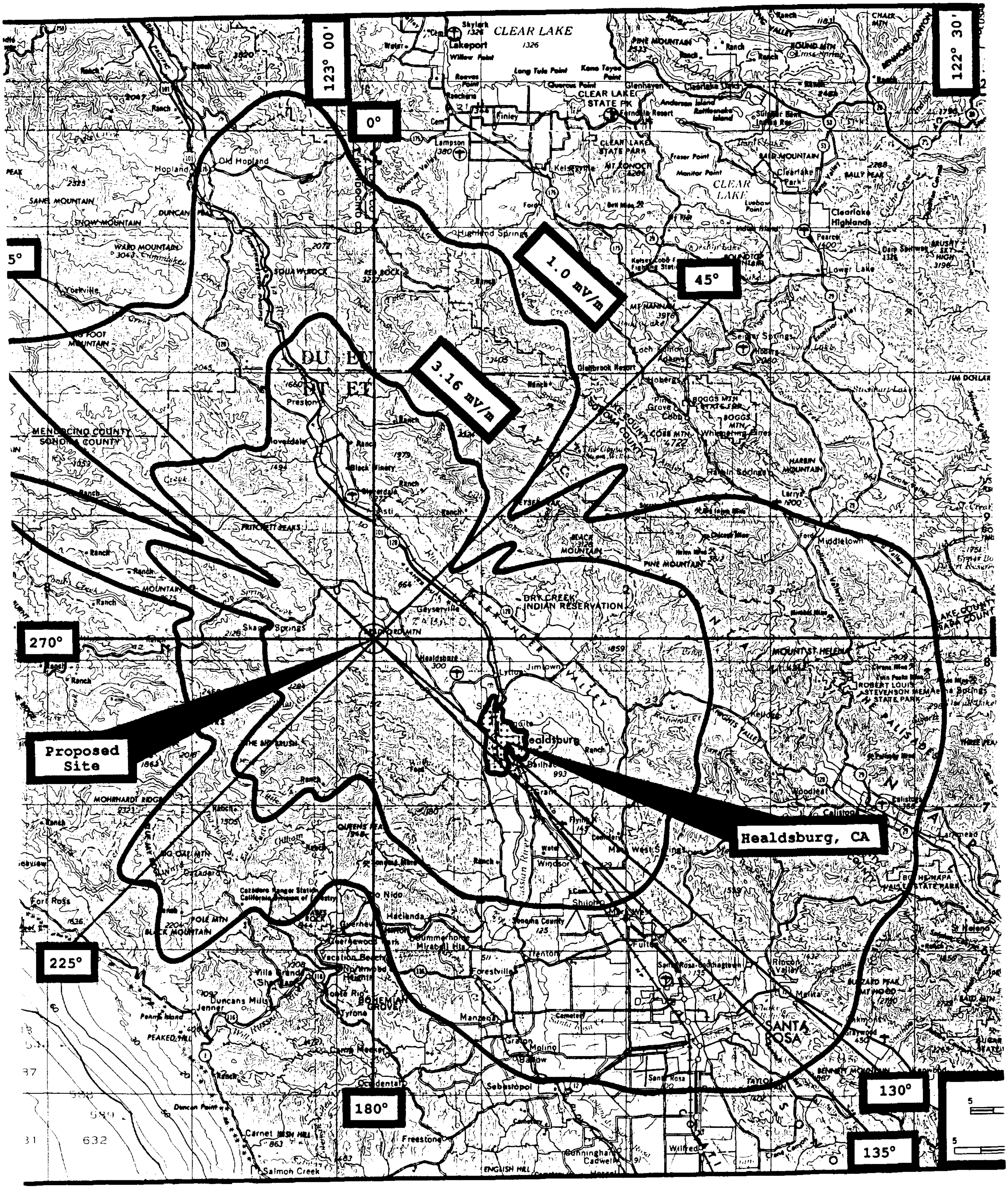
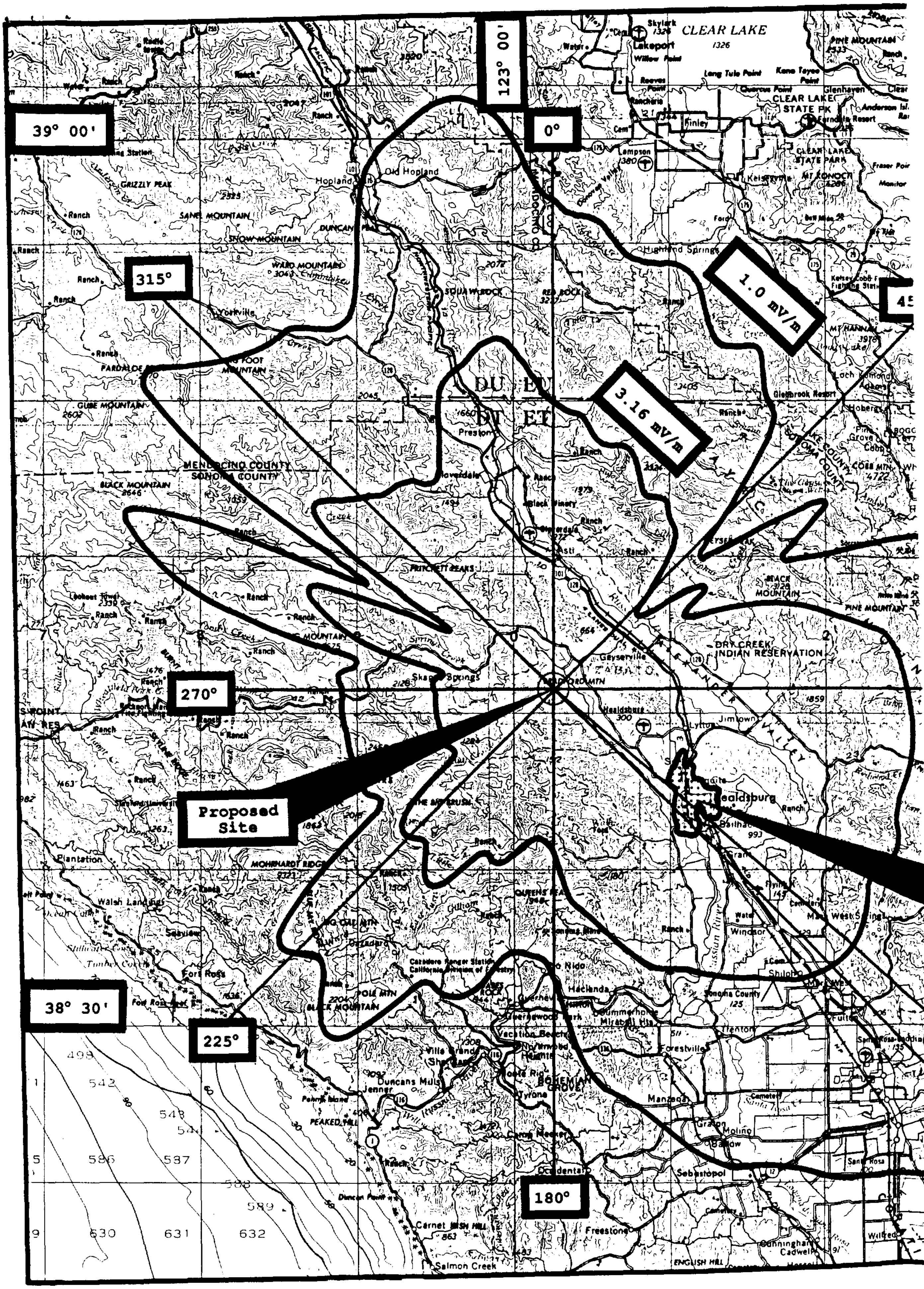

122° 30'
Original Latitude and Longitude Markings
39°00'
122°00'
Within 1.0 mV/m
(60 dBu) Contour
Population
(1980 U.S. Census):
159,611

Land Area:
2,573 sq. km
90°
Healdsburg, CA
130°
135°
Exhibit E-4
Predicted Contours
Application for a New FM Station
Ch. 240A 95.9 MHz 136m AAT 3.4 kW
Desert Rock Limited Partnership
Healdsburg, California
Prepared By Richard L. Biby
Communications Engineering Services, P.C.
Falls Church, Virginia February, 1991
Scale 1:250,000
20 Statute Miles
30 Kilometers
15 Nautical Miles
400 000 FEET
WOODLAND 33 MI.
WOODLAND 13 MI.
WINTERS 2 MI.


123° 00'
122° 30'
0°
45°
270°
225°
180°
130°
135°
1.0 mV/m
3.16 mV/m
Proposed Site
Healdsburg, CA
CLEAR LAKE
SANTA ROSA



123° 00'
39° 00'
0°
315°
45
1.0 mV/m
3.16 mV/m
270°
Proposed Site
38° 30'
225°
180°
CLEAR LAKE
Lakeport
Hopland
Old Hopland
Yorkville
Preston
Cloverdale
Asti
Geyserville
Healdsburg
Windsor
Fort Ross
Jenner
Sebastopol
Occidental
Forestville
Freestone
Salmon Creek
MENDOCINO COUNTY
SONOMA COUNTY
DRY CREEK INDIAN RESERVATION